

# INSTRUCTIONS - PARTS LIST



**306-744**

SEPT. 1974

Supersedes NOV. 1973

This manual contains **IMPORTANT WARNINGS** and **INSTRUCTIONS**  
READ AND RETAIN FOR REFERENCE

10:1 Ratio

## **PRESIDENT PUMP**

1800 PSI -- 124 bar -- *MAXIMUM WORKING PRESSURE*

Model 205-789 55 gallon drum size

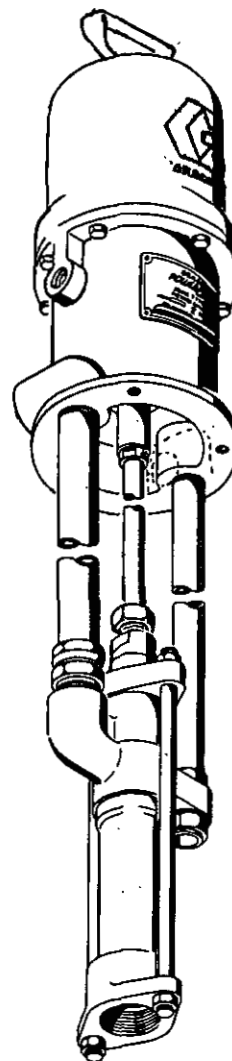
Air powered pump is easy to control; simply adjust air pressure

Divorced design prevents air motor fouling.

Displacement pump valves are adjustable for varying viscosity requirements.

ACCESSORIES on page 3.

TECHNICAL DATA on back page.



**GRACO INC. P.O. BOX 1441 Minneapolis, MN 55440**

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## INSTALLATION

Mount pump to suit the type of installation planned. Mounting accessories are shown on page 3. Pump dimensional drawings and mounting hole layout are given on page 3.

Install accessory air line filter shown on page 3 to remove moisture and dirt from air supply. Downstream from filter, install the air line oiler shown on page 3 for automatic lubrication of air motor.

## OPERATION

### ADJUSTING PUMP SPEED AND PRESSURE

If the material to be pumped can be contaminated by petroleum oil, flush the pump before using. Be sure that the solvent you use is compatible with the material to be pumped.

In a direct supply system, with air supply turned on, the pump starts as the material valve is opened, and stalls against pressure when the valve is closed. In a circulating system, the pump operates until the air supply is turned off.

Use an air regulator to control material pressure and pump speed. See page 3 for an accessory Graco air regulator. Always use the lowest air pressure needed to give the results you want.

### LUBRICATION AND CARE

Check the tightness of the packing nut weekly. Nut should be tight enough to prevent leakage -- no tighter. If adjustment is necessary, turn off air supply, relieve air and fluid pressure and use a .25" (6.4 mm) dia rod to tighten nut.

## CONNECT HOSES

Connect a .75" (19 mm) minimum ID fluid hose to the 1" NPT (F) outlet of pump with a suitable adapter. See DIMENSIONAL DRAWING on page 3.

Connect air supply hose to 1/2 npt inlet union. Main air supply line should include a bleed type air valve for shutting off and relieving air pressure to pump.

If the pump accelerates quickly, or is running too fast, stop pump immediately and check fluid supply. If the fluid supply has been exhausted and air has been pumped into lines, re-prime pump and lines with material, or flush and leave filled with a compatible solvent. Always stop the pump at the bottom of its stroke to prevent material from drying on the displacement pump and damaging packings.

When pumping materials which dry, harden, or set-up, flush system with a compatible solvent as often as necessary to prevent a build up.

For overnight or holiday shutdown, turn off air to pump and bleed off fluid pressure through gun. Remove and clean paint hoses and guns, and turn off all air to system.

### FLUID PISTON AND INTAKE VALVE ADJUSTMENT

The fluid piston and intake valves are factory set for pumping medium viscosity fluids. For heavy materials, increase ball travel by moving ball stop pins to the higher set of holes in valve bodies. For very light materials, decrease ball travel by moving ball stop pins to lower set of holes. For disassembly instructions, see FLUID PUMP SERVICE.

# SERVICE

## TROUBLESHOOTING CHART

### What's wrong

Pump fails to operate

Pump operates but

-output low on both strokes

-output low on down stroke

-output low on up stroke

Erratic or accelerated operation

### Why

Restricted line or inadequate air supply

Insufficient air pressure — closed or clogged air valves, etc.

Exhausted material supply

Obstructed material line, valves, gun, etc.

Fluid check valves need adjustment

Loosen throat packing nut or worn packings

Held open or worn fluid intake valve

Held open or worn fluid piston or packing

Damaged air motor

### What to do

..Clear; increase

..Open, clean

..Refill

..Clear\*\*

..Adjust

..Tighten nut or replace packings

..Clear, service

..Clear, service

..Service, see 306-982

\*\* Release pressures and disconnect material line. Turn on air—if pump starts, the line, etc. is clogged.

## FLUID PUMP SERVICE

Disconnect fluid pump from air motor by unscrewing swivel union from supply tube, coupling nut from displacement rod and lower lock nut.

## INTAKE VALVE

Remove tie rod locknuts and slide intake valve housing off cylinder. Pull valve seat, etc. from cylinder, disassemble, clean and inspect all parts for wear or damage, replacing as necessary.

## PISTON

Pull cylinder down off of displacement rod and piston. Unscrew piston seat from displacement rod and remove packings, spreaders, etc. Clean and inspect all parts for wear or damage, replacing as necessary.

## THROAT PACKINGS

Remove tie plate and pull displacement rod from bottom of housing. Remove bearing, glands, packing and spring. Clean and inspect all parts for wear or damage and replace as needed.

Lubricate parts and reassemble fluid pump reverse of disassembly. Always replace glands and spreaders when replacing packings.

Place fluid pump on mounting tubes. Thread upper locknut onto return tube a few turns and tighten swivel union securely onto supply tube. Refer to Fig 1. Butt connecting rod and displacement rod together and adjust locknuts on return tube to align rods. Tighten locknuts securely, being careful not to disturb alignment. Tighten coupling nut securely onto displacement rod.

Operate pump at a minimum of air pressure -- 50 psi (3.5 bar) maximum. Adjust lock nuts on return mounting tube as necessary until pump operates smoothly on 15 psi (1 bar) or less. Then tighten nuts securely.

Remount pump in system and attach air and fluid lines.

**WARNING**  
Always disconnect air supply and relieve all pressures before attempting any service. Never operate pump with air motor plates removed.

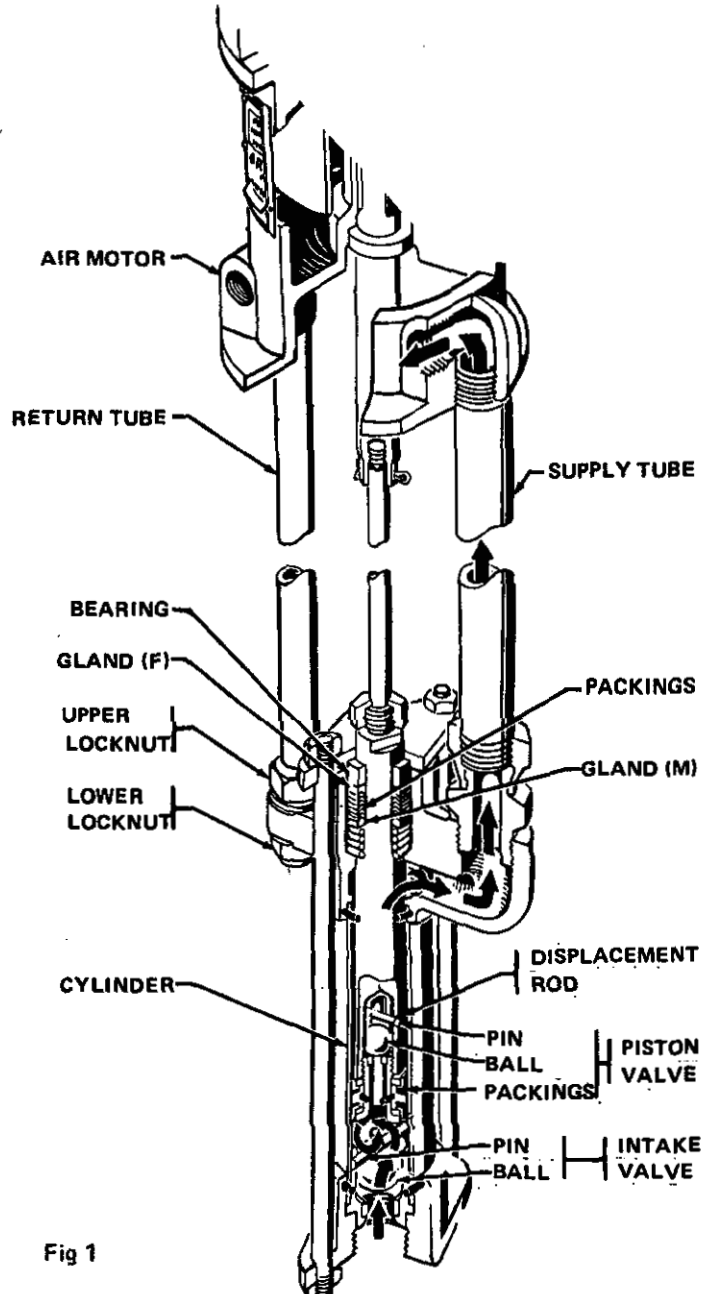
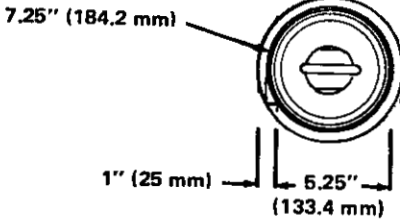


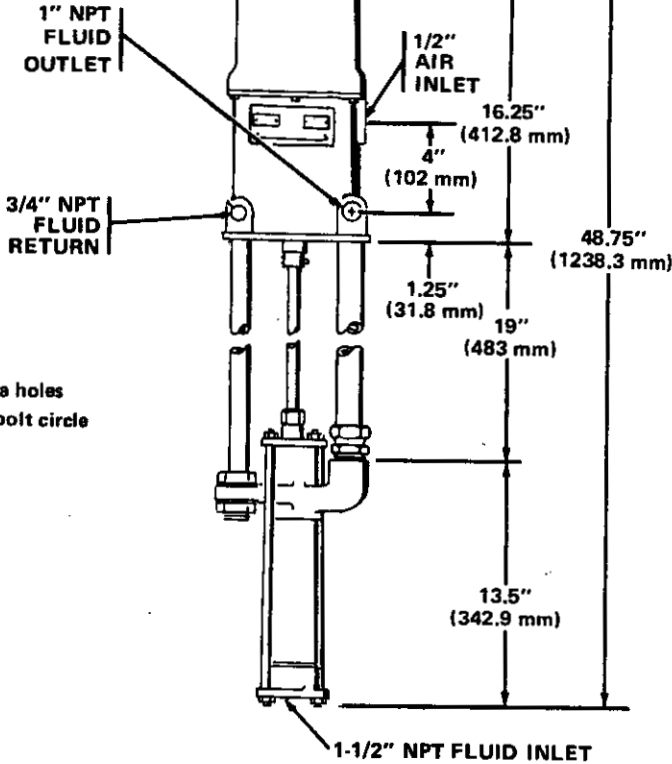
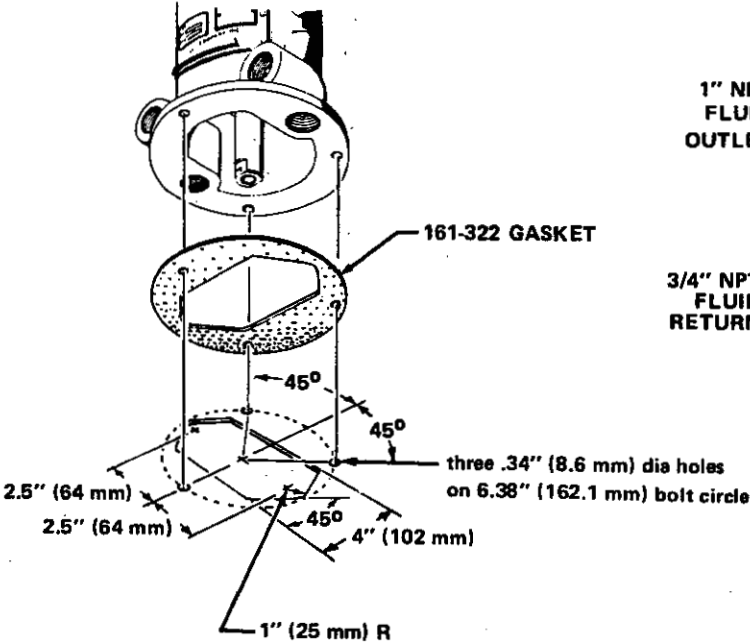
Fig 1

**DIMENSIONAL DRAWING**

**Top View**



**MOUNTING HOLE LAYOUT**

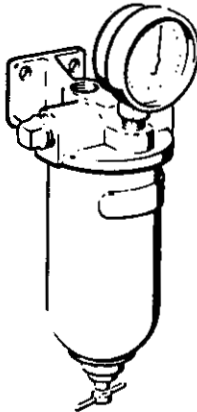


**ACCESSORIES (Must be purchased separately)**

**203-813 Sturdi-Clamp**



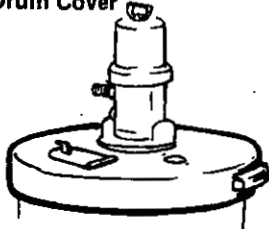
**203-421 Air Filter  
1/2" NPT Inlet  
and Outlet**



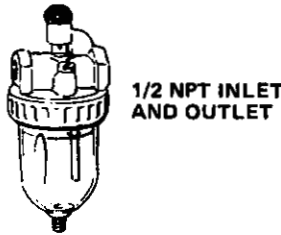
**202-858 Air Regulator**



**203-723 Drum Cover**

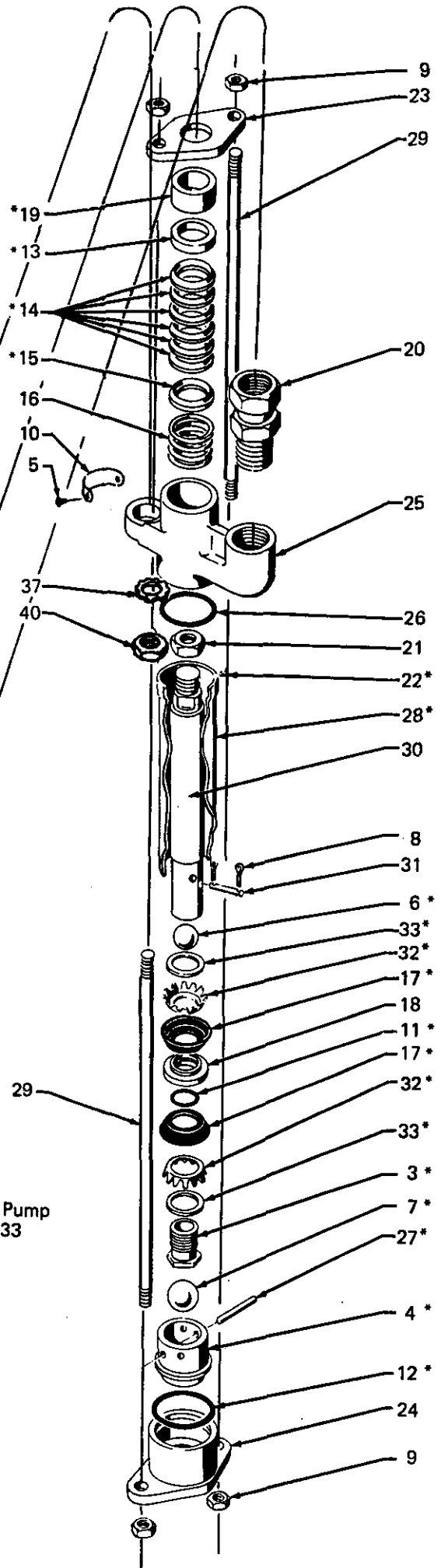
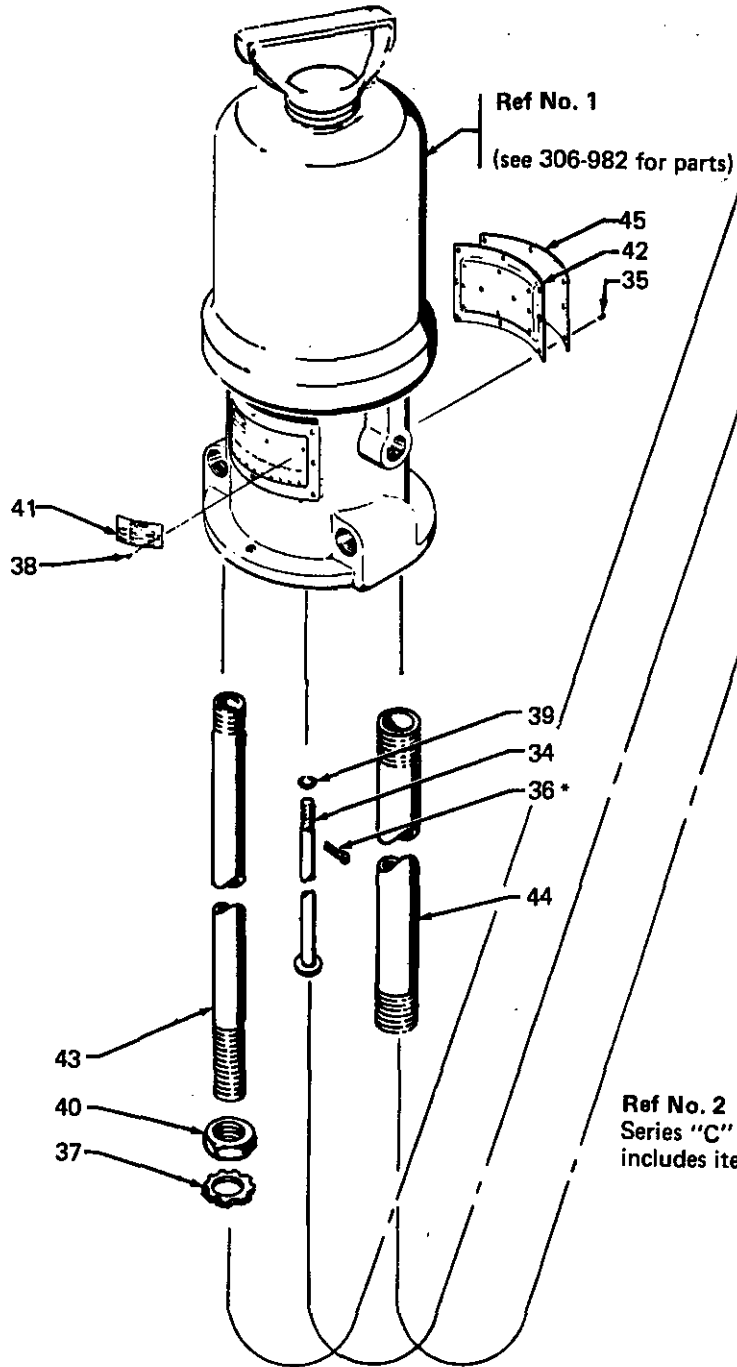


**206-652 Air Line Oiler**



Model 205-789 10:1 President Pump

206-926 REPAIR KIT (must be purchased separately) Consists of:			
Ref No.	Qty	Ref No.	Qty
8	1	17	2
11	1	19	1
12	1	26	1
13	1	32	2
14	6	33	2
15	1		



Ref No. 2  
Series "C" Displ Pump  
includes items 3-33

## PARTS LIST

REF. NO.	PART NO.	DESCRIPTION	QTY.	REF. NO.	PART NO.	DESCRIPTION	QTY.
1	205-038	AIR MOTOR Assy. see 306-982 for parts	1	23	160-716	. PLATE, tie	1
2	205-812	DISPLACEMENT PUMP Assy. Series "C" includes items 3-33	1	24	160-717	. HOUSING, intake valve	1
3	* 203-973	. SEAT, piston	1	25	160-718	. HOUSING, outlet	1
4	* 204-762	. SEAT, intake valve	1	26	160-721	. O-RING, nitrile rubber	1
5	100-055	. SCREW, type "u" drive; no. 6 x 1/4	2	27	* 160-726	. PIN, ball stop	1
6	* 100-279	. BALL, steel; .88" (22.4 mm) dia	1	28	* 165-120	. CYLINDER	1
7	* 101-178	. BALL, steel; 1.25" (31.8 mm) dia	1	29	165-121	. ROD, tie	2
8	101-274	. PIN, cotter; .12" (3.2 mm) x .5" (13mm)	2	30	* 165-122	. ROD, displacement	1
9	101-580	. NUT, lock; 1/2 npt	4	31	165-130	. PIN, ball stop	1
10	150-707	. PLATE, serial	1	32	* 171-590	. SPREADER, packing	2
11	* 154-662	. O-RING, nitrile rubber	1	33	* 171-594	. WASHER, back-up	2
12	* 156-641	. O-RING; nitrile rubber	1	34	205-813	ROD, connecting	1
13	* 157-636	. GLAND, female	1	35	100-078	SCREW, rd hd mach; no. 8-32 x 3/8	8
14	* 157-637	. V-PACKING; leather	6	36	* 100-579	PIN, cotter; .11" (2.8 mm) x 1" (25 mm)	2
15	* 157-638	. GLAND, male	1	37	101-527	LOCKWASHER, ext. shkprf; no. 1	2
16	158-388	. SPRING, compression	1	38	102-556	RIVET, blind	2
17	* 158-402	. PACKING, cup; leather	2	39	156-082	O-RING; nitrile rubber	1
18	158-857	. SPACER, piston packing	1	40	160-026	NUT, lock; return tube	2
19	* 159-045	. BEARING	1	41	160-637	PLATE, serial	1
20	160-022	. UNION, str. adapter; 1" npt (m) x 1" npt (f) swivel	1	42	162-654	PLATE, muffler	1
21	160-502	. NUT, coupling	1	43	165-123	TUBE, return	1
22	* 160-517	. PELLET, nylon	1	44	165-124	TUBE, supply	1
				45	167-692	PLATE, name	1

### \*SUGGESTED REPLACEMENT PARTS

NOTE: 306 & 307 Numbers in description refer to separate instruction manuals.

Order parts by number and name. Also give series letter and model number for which parts are ordered. Call or write your Graco distributor, nearest Graco factory branch or service depot for parts or service.

## SERVICE INFORMATION

Listed below by the assembly changed are OLD and NEW parts.

ASSEMBLY CHANGED	PART DESIGNATION	REF NO.	PART NO.	NAME
205-812	OLD		158-404	Spreader
DISPL PUMP	OLD		158-856	Washer
Series to	NEW	32	171-590	Spreader
"C"	NEW	33	171-594	Washer

INTERCHANGEABILITY NOTE: NEW parts replace OLD parts listed above them as a group.

## TECHNICAL DATA

Air operating range	:	40 to 180 psi (3 to 12 bar)
Air consumption	:	13 cfm per gallon pumped (.1 m <sup>3</sup> /min/l) at 100 psi (7 bar) air supply pressure: up to 39 cfm (1.1 m <sup>3</sup> /min) with pump operated within recommended range.
Pump cycles per gallon (3.8 l)	:	20
Maximum recommended pump speed	:	60 cycles per minute: 3 gpm (11.4 l/min)
Recommended speed for optimum pump life	:	20 cycles per minute: 1 gpm (3.8 l/min)
Wetted parts	:	Nitralloy, Steel, Copper, Leather, Nitrile Rubber
Weight	:	41 lb (18.6 kg)

## THE GRACO WARRANTY

Graco Inc. warrants all equipment manufactured by it and bearing its name to be free from defects in material and workmanship under normal use and service. Scope of this warranty extends to the original purchaser for a period of 12 months from the date of purchase and is applicable only when the equipment is installed and operated in accordance with factory recommendations. The warranty does not extend to damage or wear caused by misuse, abrasion, corrosion, negligence, accident, faulty installation or tampering in a manner to impair its normal operation.

In the event the equipment supplied by Graco Inc. is found to be defective within the above-stated 12-month period, Graco Inc. will repair or replace free of charge such defective parts if rendered prepaid to the factory or to an authorized Graco service agency and is found by Graco Inc.'s inspection to be truly defective in workmanship or material. In the event said material is deemed defective in workmanship or material, it will be corrected and shipped transportation prepaid within the continental U.S. If inspection of any such equipment by Graco Inc. does not disclose any defect in workmanship or material, repairs will be made at a reasonable charge. Purchased assemblies which are incorporated into Graco equipment, carry the manufacturer's regular warranty.

The foregoing warranties are exclusive, and are in lieu of all other warranties (whether written, oral or implied) including warranty of merchantability in other respects than expressly set forth above and warranty of fitness for a particular purpose. Except as herein provided, every form of liability for direct or consequential damages or loss is expressly excluded and denied.



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**GRACO INC. P.O. BOX 1441 Minneapolis, MN 55440**

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